

Changkat Changi Secondary School
Physics Department
4E/5NA

Name: _____ () Class: _____ Date: _____

TOPIC : Dynamics (Vectors & Scalars)

WORKSHEET 3A.1

18

1. There are two kinds of quantities in Physics, scalars and vectors.

[4]

(a) What is the difference between a vector quantity and a scalar quantity?

(b) Give one example of a vector quantity and one example of a scalar quantity.

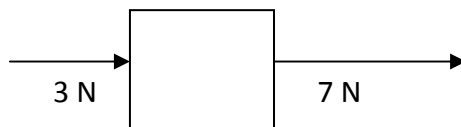
Vector quantity _____.

Scalar quantity _____.

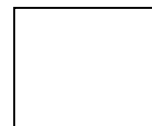
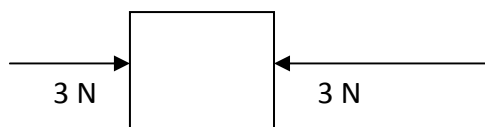
2. Forces are applied to a box in a few cases shown below. For each diagram, draw the resultant force on the box next to it. You need not draw to scale.

[4]

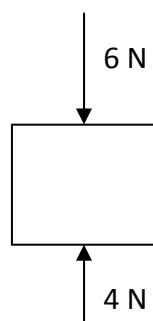
(a)



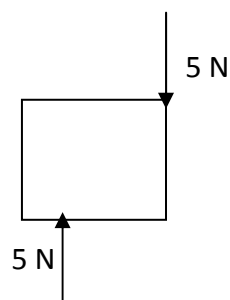
(b)



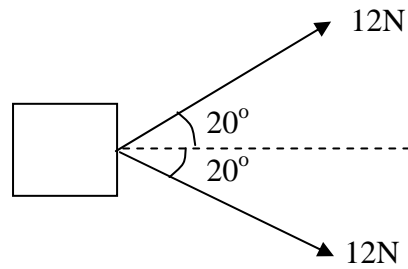
(c)



(d)

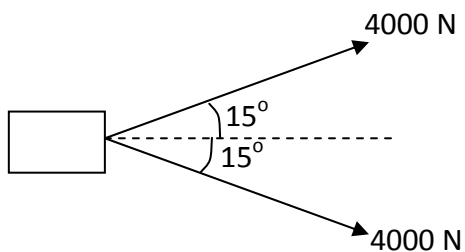


3. A mass is acted on by two forces, each of 12 N. The forces are at an angle of 40° to each other as shown in the figure below. [2]



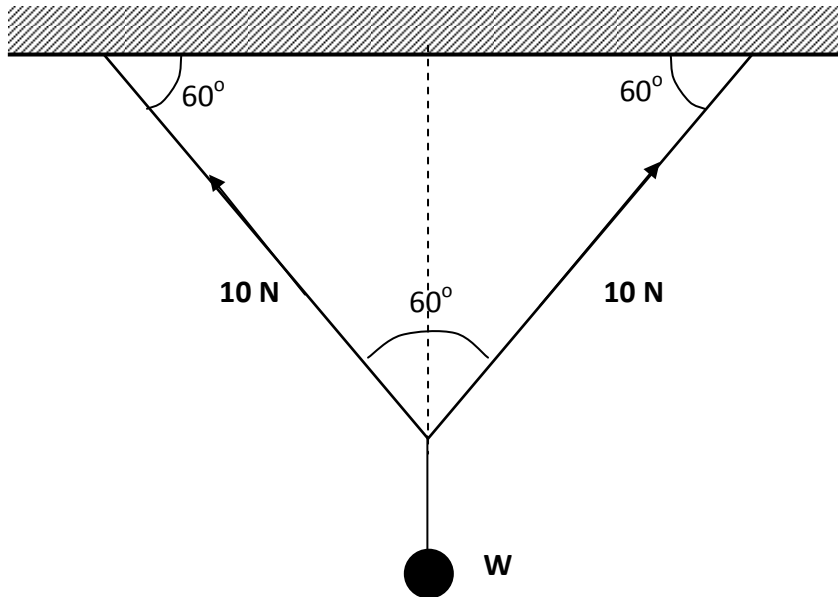
Using a scale of 1 cm to 2 N, draw a vector diagram to determine the resultant force acting on the mass.

4. A lorry is being pulled by two jeeps. Each jeep exerts a force of 4000 N at an angle of 15° to the horizontal in the direction shown. [2]



Using a scale of 1 cm to 800 N, draw a scaled diagram to find the resultant force pulling the lorry forward.

5. A mass of weight W is supported by two strings as shown. The tension in each string is 10 N.



- (i) Using a scale of 1 cm to 2 N, determine the upward force required to balance the weight W . [2]

- (ii) Hence, determine the mass of W . [1]

6. Fig 3.1 shows a lantern that is held by two wires. The tension in each wire is 16N and the angle between the wires is 120°

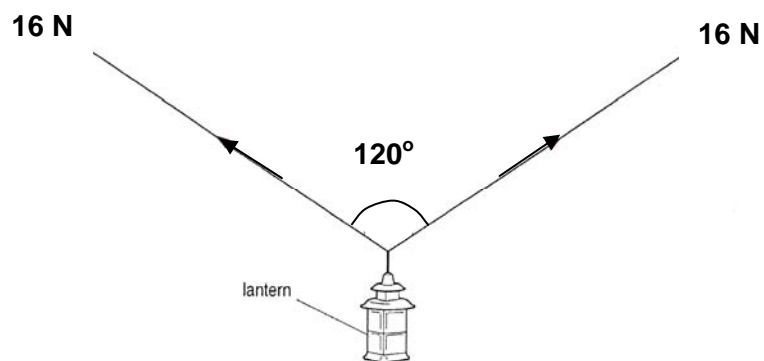


Fig. 3.1

- (i) Draw a vector diagram to scale in order to determine the resultant force.
State the scale used. Scale: 1 cm represents

[2]

- (ii) Hence, state the weight of the lantern.

Weight = N

[1]